



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/803,002

03/17/2004

Brig Barnum Elliott

03-4042

4392

32127

7590

08/22/2008

VERIZON

PATENT MANAGEMENT GROUP

1515 N. COURTHOUSE ROAD, SUITE 500

ARLINGTON, VA 22201-2909

EXAMINER

OVEISSI, DAVID M

ART UNIT

PAPER NUMBER

2616

NOTIFICATION DATE

DELIVERY MODE

08/22/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@VERIZON.COM

Office Action Summary	Application No. 10/803,002	Applicant(s) ELLIOTT, BRIG BARNUM	
	Examiner DAVID OVEISSI	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments filed 20 May 2008 have been fully considered but they are not persuasive. Applicant argued that **Svanbro et al. (US 6,967,964 B1)**, in view of **Birdwell et al. (6,032,197)** do not teach or suggest that “ a compressed header comprising: a first value for deriving an uncompressed header or said packet on a second uncompressed header based or a third uncompressed header”. Examiner respectfully disagrees. **Svanbro** teaches that compressed key comprises two fields (see abstract “... a first subset of values for the first field of header compression key is employed to distinguish between different header compression...”). **Birdwell** teaches that the system transmits both full-length data packets, which have uncompressed headers, and reduced-length data packets, which have compressed headers derived from associated uncompressed header. **Birdwell** teaches “...*The memory location holds the uncompressed header from which the compressed header was derived...The packet header decompressor then reconstructs missing fields in the compressed header from the full set of fields in the associated uncompressed header.*” (see column 3 lines 21-25).

Claim Objection

Claim 31 is objected because it is claimed to depend on dependent claim 28. Examiner believes claim 31 depends on independent claim 11. If this is true, please make appropriate corrections.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10 are rejected under 35 U.S.C. 101 because they are non statutory.

Claims 1-10 are non statutory subject matter because it recites waveform (packet) which is a frequency. Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in U.S.C 101.

First, a claimed signal is clearly not a "process" under U.S.C 101 because it is not a series of steps. The other three 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims". 1D. Chisum, patents 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result. "Corning v. Burden. 56 U.S (1 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical

Art Unit: 2616

structure, does not itself perform any useful, concrete and tangible result and thus, does not fit within the definition of a machine.

"A composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture or they be gases, fluids, powders or solids." *Shell development Co. V. Watson*, 149 F. Supp 279, 280, 113 USPQ 265, 266 (D.D.C 1957), *aff'd* 252 F.2d 861, 116 USPQ 428 (D.C cir 1958). A claimed signal is not matter but a form of energy and therefore is not a composition of matter.

The supreme court has read the term "manufacture" in accordance with its dictionary definition to mean " the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties or combinations, whether by hand-labor or by machinery." A manufacture is also defined as the residual class of product. 1 Chisum 1.02[3] (citing *W.Robinson, The law of patents for useful inventions* 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with

Art Unit: 2616

a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or signal.

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of U.S.C 101.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-13, 15-27, and 31 are rejected under 35 U.S.C. 103 (a) as being anticipated by **Svanbro et al. (US 6,967,964 B1)**, in view of **Birdwell et al. (6,032,197)**.

For claim 1 **Svanbro** teaches a packet in a computer-readable medium (see *abstract line 2 "...sending a packet (22)..."*), comprising:

a compressed header (see *abstract line 3'... compressed header..."*) comprising:

a first value for deriving an uncompressed header for the packet based on a second uncompressed header (see *abstract "...first field, second field, first set of*

Art Unit: 2616

values, second set of values...” Fig. 1 “Key, Field1, Field 2, Uncompressed header”);
and

a second value for deriving the uncompressed header based on a third
uncompressed header(see abstract “...first field, second field, first set of values, second
set of values...” Fig. 1 and Fig. 5 “Key, Field1, Field 2, Uncompressed header”),

Svanbro does not teach where the uncompressed header, the second
uncompressed header, and the third uncompressed header are associated with
different packets arriving in any order. Furthermore, **Birdwell** from the same field of
endeavor teaches this limitation (see abstract “.... The system transmits both full-length
data packets, which have compressed headers derived from associated uncompressed
headers. the server transmits a series of intermixed full-length and reduced-length
packets to the client., column 3 lines 21-25 “...The memory location holds the
uncompressed header from which the compressed header was derived...The packet
header decompressor then reconstructs missing fields in the compressed header from
the full set of fields in the associated uncompressed header.”). Thus, it would have
been obvious to the person of ordinary skill in the art at the time of the invention to use
the header compression of **Birdwell** in the header compression of **Svanbro**. The
motivation for this combination is to provide a more versatile deader compression.

For claim 2 **Svanbro** teach a packet, wherein the first value is computed based
on the uncompressed header and the second uncompressed header (see column 2

line36-62 and column 12 table 4).

For claim 3 **Svanbro** teach a packet, wherein the first value corresponds to a difference between: a value representative of a portion of the uncompressed header, and a value representative of a corresponding portion of the second uncompressed header (*see column 3 line 6*).

For claim 7 **Svanbro** teach a packet, wherein the uncompressed header, the second uncompressed header, and the third uncompressed header include at least one of: an Internet Protocol header, a Transmission Control Protocol header, a User Datagram Protocol header, and a Real-Time Protocol header (*see Fig. 5 IP, UDP, RTP header*”).

For claim 8 **Svanbro** teach a packet, wherein the compressed header further comprises: at least one of: a destination address, a packet sequence number, and a packet stream identifier number (*see abstract “CID”*).

For claim 9 **Svanbro** teach a packet, wherein the compressed header further comprises: at least one other value distinct from the first and second values, the at least one other value for deriving the uncompressed header based on at least one other uncompressed header distinct from the second and third uncompressed headers (*see abstract “first field and second field”*).

For claim 10 **Svanbro** teach a packet, wherein the packets associated with the second and third uncompressed headers are consecutive headers from a packet stream (*see column 2 lines 35-62*).

For claims 11, 22, 27, and 31 **Svanbro** teach a method/computer program product of communicating data, the method comprising: maintaining, at a first network node, at least an uncompressed header;

transmitting, from the first network node, a packet comprising (*see abstract*):

a first value for deriving the uncompressed header based on the second uncompressed header(*see abstract line 3*) ; and

a second value for deriving the uncompressed header based on the third uncompressed header(*see abstract first field, second field, Fig. 1 "24", "24' "*);

deriving the uncompressed header at the second network node based on the at least one of the second uncompressed header and the third uncompressed header (*see abstract first field and second field*").

Svanbro does not teach maintaining, at a second network node, at least one of a second uncompressed header and a third uncompressed header. Furthermore, Birdwell from the same field of endeavor teaches this limitation (*see Fig. 7 "Header table" and column 8 lines 15-18*).

Svanbro does not teach receiving the packet at the second network node maintaining the packet at the second network node until at least one of the second

Art Unit: 2616

uncompressed header and the third uncompressed header are made available.

Furthermore, Birdwell from the same field of endeavor teaches this limitation (*see Fig. 7 "Header table" and column 8 lines 15-18*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of invention to use the header compression of Birdwell in the header compression of the Svanbro. The motivation for this combination is to provide a fault tolerance system.

For claim 12 **Svanbro** teach a method, wherein the packet traverses a connection from the first node to the second node that includes no intervening nodes (*see Fig. 1 "node"*).

For claim 13 **Svanbro** teach a method, wherein the packet traverses a connection from the first node to the second node that includes at least one intervening node (*see Fig. 1 "node"*).

For claim 15 **Svanbro** teaches a method, further comprising: obtaining the second value by computing a difference between: a value representative of a portion of the uncompressed header, and a value representative of a corresponding portion of the third uncompressed header (*see abstract field one and field 2*).

For claim 16 **Svanbro** teaches a method, further comprising: obtaining at least

Art Unit: 2616

one other value distinct from the first and second values, the at least one other value for deriving the uncompressed header based on at least one other uncompressed header distinct from the second and third uncompressed headers(see *abstract field one and field 2*).

For claim 17 **Svanbro** teaches a method, wherein deriving the uncompressed header at the second node comprises: if the second uncompressed header is maintained at the second node, deriving the uncompressed header by summing the second uncompressed header and the first value; and if the third uncompressed header is maintained at the second node, deriving the uncompressed header by summing the third uncompressed header and the second value (see Fig.1 “Node, 23, 24, 29₁, and 29₂).

For claims 18 and 26 a **Svanbro** teaches a method/computer program product of communicating data, the method comprising:

providing an uncompressed header to be transmitted (*see abstract*);

forming a plurality of values by computing, for each of at least two transmitted headers in the plurality of transmitted headers, a corresponding value for deriving the uncompressed header (*see abstract –field 1 and field 2, and Fig. 6 “compressed header”*); and

Svanbro does not teach transmitting a packet comprising the plurality of values, wherein packet is capable of being received out of order of at least one of the plurality of

Art Unit: 2616

transmitted headers. Furthermore, **Birdwell** from the same field of endeavor teaches this limitation (*see abstract –the server transmits a series of intermixed full-length and reduced-length packets to the client*).

Svanbro does not teach storing a plurality of transmitted packet headers.

Furthermore, **Birdwell** from the same field of endeavor teaches this limitation (*see Fig. 7 “HEADER TABLE”, and column 8 lines 15-30*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the header compression of Birdwell in the header compression of Svanbro. The motivation for this combination is to provide a more versatile deader compression.

For claim 19 **Svanbro** does not teach a method, wherein a predetermined number of transmitted packet headers are stored. Furthermore, **Birdwell** from the same field of endeavor teaches this limitation (*see Fig. 7 “HEADER TABLE”, and column 8 lines 15-30*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the header compression of Birdwell in the header compression of Svanbro. The motivation for this combination is to provide a more versatile deader compression.

For claim 20 **Svanbro** teaches a method, further comprising: replacing one packet header in the plurality of transmitted packet headers with the uncompressed header (*see the abstract*).

For claims 21, 23 and 25 **Svanbro** does not teach a method, further comprising: including the uncompressed header in the plurality of transmitted packet headers. Furthermore, **Birdwell** from the same field of endeavor teaches this limitation (see *Fig. 7 "HEADER TABLE", AND COLUMN 8 LINES 15-30*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the header compression of Birdwell in the header compression of Svanbro. The motivation for this combination is to provide a more versatile deader compression.

For claim 24 **Svanbro** teaches a method, further comprising: replacing one of the plurality of packet headers with the uncompressed header (see *abstract*).

3. Claims 4, 5, 6, and 14 are rejected under 35 U.S.C. 102 (b) as being anticipated by **Svanbro et al. (US 6,967,964 B1)**, in view of **Birdwell et al. (6,032,197)** further in view of **Miyazaki (US 6,914,903 b1)**.

For claim 4 **Svanbro** and **Birdwell** teach all the subject matter with the exception of a packet, wherein the second value is computed based on the uncompressed header and the third uncompressed header. However, Miyazaki from the same field of endeavor teaches this limitation (see *abstract, Fig. 1 (b) "difference data", and Fig. 4.*). Thus, it would have been obvious to the person of ordinary skill in the art to use the Miyazaki compression method in the Birdwell and Svanbro. The motivation for

Art Unit: 2616

this integration is to provide a flexible header compression.

For claim 5 **Svanbro** and **Birdwell** teach all the subject matter with the exception of a packet, wherein the second value corresponds to a difference between: a value representative of a portion of the uncompressed header, and a value representative of a corresponding portion of the third uncompressed header. However, Miyazaki from the same field of endeavor teaches this limitation (*see abstract, Fig. 1 (b) "difference data", and Fig. 4.*). Thus, it would have been obvious to the person of ordinary skill in the art to use the Miyazaki compression method in the Birdwell and Svanbro. The motivation for this integration is to provide a flexible header compression.

For claim 6 **Svanbro** and **Birdwell** teach all the subject matter with the exception of a packet, wherein the first value and the second value are encoded by at least one of: a variable-length code and a sign-based code. However, Miyazaki from the same field of endeavor teaches this limitation (*see column 14 line s 5-10.*). Thus, it would have been obvious to the person of ordinary skill in the art to use the Miyazaki compression method in the Birdwell and Svanbro. The motivation for this integration is to provide a flexible header compression.

For claim 14 **Svanbro** and **Birdwell** teach all the subject matter with the exception of a packet a method, further comprising: obtaining the first value by computing a difference between: a value representative of a portion of the

Art Unit: 2616

uncompressed header, and a value representative of a corresponding portion of the second uncompressed header. However, Miyazaki from the same field of endeavor teaches this limitation (*see column abstract*). Thus, it would have been obvious to the person of ordinary skill in the art to use the Miyazaki compression method in the Birdwell and Svanbro. The motivation for this integration is to provide a flexible header compression.

Allowable Subject Matter

3. Claims 28-30 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure: **Hata et al. (US 2002/0059464 A1), Amri et al. (5,535,199), (US 6,882,637 B1), and Seada et al. (US 2004/0103277 A1).**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID OVEISSI whose telephone number is (571)270-3127. The examiner can normally be reached on Monday to Friday 8:00 AM to 5:00 PM EST.

Art Unit: 2616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Huy D. Vu/

Supervisory Patent Examiner, Art Unit 2616